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two feet. I could hear a pronounced rattle as the material was dragged down the shore, and several boulders as big as hen's eggs were rolled three to four feet. Following the withdrawal of the water was a series of waves produced by the prow and sides of the boat. These waves, some of which were a foot high, occurred in sets of three, three more noticeable sets, followed by many smaller ones. They sorted material up to the size of a walnut.

In streams, such as this one, which form the paths of commerce for many cities, the erosion produced by the combined passage of craft of all kinds must be a not-inconsiderable factor.

G. W. TOWER.

U. S. GEOLOGICAL SURVEY, Washington, D. C.

#### SCIENTIFIC LITERATURE.

*The Polar Hares of Eastern North America, with Descriptions of New Forms.* By SAMUEL N. RHOADS. *Am. Naturalist*, March, 1896, pp. 234-239.

The Polar Hare of North America was separated from that of Scandinavia by Leach as long ago as 1819, since which date its specific distinctness has been admitted by nearly all mammalogists. Still, Mr. Rhoads finds it necessary to reestablish its claim to recognition, and also to drop the time-honored name *glacialis* conferred by the naturalist Leach, who described it, and to substitute therefor the name *arcticus*, under which it was mentioned by Capt. John Ross, commander of the expedition which brought back the specimen. Capt. Ross was not a naturalist and made no claim to technical knowledge of zoölogy, but in his report on the expedition he mentioned, under the heading 'Zoölogical Memoranda,' a number of mammals and birds. Among these the Polar Hare naturally found a place. His brief account of this animal begins with the words: 'Species *Lepus arcticus*, Leach,' from which it is to be inferred that Leach, who gave him the name, at that time intended to use it. Capt. Ross stated further: "Dr. Leach thinks it [the Polar Hare of Baffin Land] to be very distinct from the common White Hare of Scotland (*Lepus albus*, Brisson) and equally so from the *Lepus variabilis*, Pallas. See Appendix, No. V."—showing that all he knew of the animal

came from Leach. Leach contributed to Capt. Ross' report a chapter entitled, 'Descriptions of the New Species of Animals Discovered by His Majesty's Ship *Isabella* in a Voyage to the Arctic Regions' (Vol. II., pp. 169-179). Leach's name *glacialis*, followed by a Latin diagnosis and English description, occurs on page 170, while the name *arcticus*, as published by Ross, is on page 151 of the same volume.

Briefly stated, the facts seem to be these: Leach, the naturalist, discovered that the American Polar Hare is different from the European and described it under the name *arcticus*, which name he changed before the report was printed, perhaps while it was passing through the press, to *glacialis*. Capt. Ross published the name and facts communicated to him by Leach, and the sequence of chapters gave him twenty pages priority. The question is, shall the name of a new species, given by a naturalist of repute and accompanied by a proper diagnosis, be set aside because an accident of sequence brings another name a few pages earlier in the same publication. This question Mr. Rhoads answers in the affirmative. The verdict of other naturalists on the same point is of interest. A hasty examination of the literature shows that ten persons have used the name *arcticus*, while thirty-six have used the name *glacialis*, as follows:

#### AUTHORS WHO MENTION THE AMERICAN POLAR HARE UNDER THE NAME ARCTICUS.

Ross, 1819	Trouessart, 1880
Gray, 1843, 1867	Coues, 1884
Gerrard, 1862	Murdoch, 1885
Fitzinger, 1867	True, 1887
Allen, 1875, 1877	Rhoads, 1896

#### AUTHORS WHO MENTION THE AMERICAN POLAR HARE UNDER THE NAME GLACIALIS.

Leach, 1819	Gray & Ray, 1850
Sabine, 1823	Audubon & Bachman, 1854
Jameson & Scoresby, 1823	Baird, 1857
Parry, 1824	Osborn, 1859
Richardson, 1825, 1829 1836, 1839	Bernard J. Ross, 1862
Harlan, 1825	Murray, 1866
J. C. Ross, 1825, 1826	Chenu, 1867
Godman, 1826	Brown, 1868, 1875
Lesson, 1827, 1842	Dall, 1870
Hamilton Smith, 1827	Allen, 1871

Fischer, 1829	Lilljeborg, 1874
Bachman, 1837, 1839	Gill, 1876
Schinz, 1844	Rink, 1877
Wagner, 1844	Feilden, 1878
Nilsson, 1847	Greely, 1888
Luben, 1848	Brauer, 1888
Waterhouse, 1848	Merriam, 1892

If there were no other reason for choosing *glacialis* instead of *arcticus*, and wholly irrespective of the merits of the two names, *glacialis* would have to be taken if we accept the rule that in cases of names of equal pertinency, the first reviser of the group has the privilege of fixing the name. *Lepus glacialis* was used without exception by all the naturalists who published on American rabbits between 1819 and 1843, including Richardson, Godman, Lesson, Hamilton Smith, Fischer and Bachman. It is obvious, therefore, that the name *glacialis* cannot be displaced unless one of earlier date be found.

Linnæus described the Arctic-Alpine Hare of the mountains of northern Europe, under the name *Lepus timidus*, in the 10th edition of his *Systema Naturæ* (1758, p. 57), and referred to his previous description in *Fauna Suecica* (1746, No. 19, p. 8), thus fixing Scandinavia, and presumably southern Sweden, as the type locality of the species. The common large hare of Europe, although often confused with *L. timidus*, is a distinct species and was named *L. europæus* by Pallas as early as 1778. The distinctness of the two was admitted by Nilsson, Lilljeborg and others, and is recognized by Lydekker, one of the most conservative mammalogists of the present day. Notwithstanding these facts, Mr. Rhoads takes the trouble to re-restrict the type locality of *timidus* to 'Southern Sweden,' and to re-affirm the distinctness of the American animal—a point conceded by nearly all mammalogists for three-quarters of a century.

Mr. Rhoads' next effort is to divide the American Polar Hare into additional species and sub-species, as follows: *L. arcticus* [= *L. glacialis* Leach] from Baffin Land, *L. arcticus bangsii* from Newfoundland; and *L. greenlandicus* from Greenland. Instead of contrasting these with one another, or with the original *Lepus glacialis* of Leach as a standard, he crosses the seas to make his comparison with

*L. timidus*. Hence, if one aspires to know how the Newfoundland and Greenland Hares differ from the typical American animal from Baffin Land, he must first ascertain how each differs from the Scandinavian *timidus*, and then, by various processes of addition and subtraction, seek to find how they differ from one another. At this point he is likely to be overwhelmed with discouragement, for Mr. Rhoads does not always describe the same parts or structures in the forms he names as new. Thus, we are told that, in *L. timidus* "the radius of the arc described by the incisors is one-eighth ( $\frac{1}{8}$ ) of the basilar length of the skull," and in *L. greenlandicus* the same radius 'is one-fifth ( $\frac{2}{5}$ ) the basilar length,' but in *arcticus* and *bangsii* the arcs of the incisors are not described at all, leaving the student of the geometry of Leporine teeth in abject despair.

After a somewhat exhausting study of Mr. Rhoads' paper, the only tangible difference I am able to find between the Newfoundland and Baffin Land Hares is that the latter turns gray in summer, while the former turns only partly gray. This sets one to wondering if Mr. Rhoads will next separate weasels that turn white in winter from specimens of the same species that remain brown the year round.

At the close of his paper Mr. Rhoads states that he "is now preparing a more comprehensive revision, with illustrations, of the New World representatives of the *Lepus timidus* group." Let us earnestly hope that he will make it sufficiently comprehensive to tell how the component parts of the American Polar Hare differ from one another. C. H. M.

*North American Birds.* By H. NEHRLING. 4°, part XIII., pp. 47, pls. 2. March, 1896. Geo. Brumder, Milwaukee.

The 13th part of Nehrling's well-known work has just come to hand. It treats of the Cardinals, Rose-breasted and Blue Grosbeaks, Indigo, Lazuli and Painted Buntings, Grass-quits, the Dicksissel, Lark Bunting or White-winged Blackbird, and Bobolink. The text maintains the high standard of the earlier numbers, but the two colored plates, both of which are of the 'mixed' kind, are cheaply printed and decidedly inferior.